TouchKit Touch Panel
User manual
for WindowsXP
Version: 3.1.4

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Chapter 1. Touch Panel Controller

This touch panel controller provides the optimistic performance of analog resistive touch panels for 4 wire, 5 wire and 8 wire models. It communicates with PC system directly through RS232, PS/2 or USB connector. user can see how superior the design is in sensitivity, accuracy and friendly operation. The touch panel driver emulates mouse left and right button function and supports operation systems including Microsoft Windows 95/98/ME/2000/NT/XP/XP Tablet PC Edition, Windows CE 2.12/3.0/.NET, Linux, iMac and DOS.

1.1 Controller

Interface	RS232	USB	PS/2
4-wire	Ready	Ready	Ready
5-wire	Ready	Ready	Ready
8-wire	Ready	Ready	Ready

1.2 Specifications and Features

Specifications for Touchkit controller.

Specifications	
Power requirements	+5VDC (Maximum 100mA, typical 70mA, 50mV peak to peak maximum ripple)
Operating temperature	0 to 50 ℃
Storage Temperature	-40 to 80 ℃
Relative Humidity	95% at 60 ℃
Protocol	RS232 Model: 9600 bauds, None parity, 8 data bits, 1 stop bit USB Model: USB 1.1 Low speed PS/2 Model: PS/2 mouse
Resolution	2048 X 2048
Report rate	RS232 Model: Max. 160 points/sec USB Model: Max. 160 points/sec PS/2 Model: Max. 140 points/sec
Response time	Resistive: Max. 35 ms Capacitive: Max. 20 ms
Pin out definition	4 wire model: X, Y, X, Y 5 wire model: UL, UR, COM, LR, LL 8 wire model: X+, X+ref, Y+, Y+ref, X- , X-ref, Y-, Y-ref
Panel resistance	4, 8 wire resistive model: 200 ~ 900 ohm (pin to pin on the same layer) 5 wire resistive model: 50 ~ 200 ohm (pin to pin on drive layer)
Regulatory Approvals	FCC-B, CE

Features for Touchkit software

Features	
Calibration	1. Fast full oriental 4 points position 2. Support monitor / display rotation 3. Support multiple monitor / display 4. Support QVGA and Half-VGA function
Compensation	Accuracy 25 points linearity compensation.
Draw Test	Position and linearity verification
Controller Setting	1. Support multiple controllers 2. Dynamical add / remove controllers 3. Change Controller interface without reboot.
Language	Support 9 languages for Windows
Mouse Emulator	1. Right / Left button emulation 2. Normal / Click on touch / Click on release mode 3. Cursor visibility
Sound Notification	1. No sound 2. Touch Down 3. Lift Up 4. Frequency adjustment 5. Duration adjustment
Double Click	1. Configurable double click speed 2. Configurable double click area
OS support	1. Windows 95/98/ME/NT4/2000/XP/ Windows XP Tablet PC Edition 2. Windows CE 2.12, 3.0, .NET 3. Linux (X Window Version: 3, 4 Red Hat 6.0 ~ 8.0 Mandrake 5.0 ~ 9.0) 4. iMac. OS9 5. MS-DOS: Support display resolution: 320x200, 640x200, 640x350, 640x480, 800x600, 1024x768 and 1280x1024
COM port support	1. Support COM 1 ~ COM 256 for Windows and Linux 2. Support COM 1 ~ COM 8 for DOS

Chapter 2. Installing and using TouchKit

TouchKit is software, which contains drivers of the touch panel controllers for the specified communication connectors, RS232, PS/2 and USB, and the other two utilities.

The two utilities are as follows:

- **Touch Tray support**
  This is utility for emulating the right and left button of mouse through controlling touch panel. Users can toggle between right or left mouse buttons by this utility.

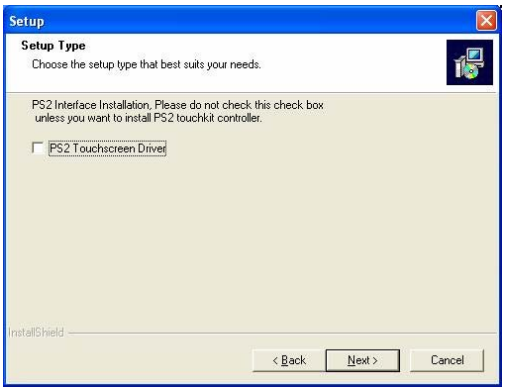
- **Configuration support**
  The calibration and draw test of touch panel are done by this utility. Besides, users can add or remove for new RS-232 or PS/2 touch panel devices.

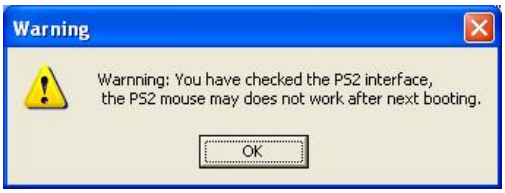
Follow these steps to install ***TouchKit.***

1. Put the ***TouchKit*** CD to CD-ROM.
2. Open the **Win2000_XP** directory.
3. Double click the **Setup.exe**, then windows starts to run the installation program. Notice that do not plug the USB controller on the system before the installation has been finished.
4. Just click **[Next >]** button to continue installation.

Setup
Welcome to TouchKit Setup
This program will install TouchKit on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
Next >
Cancel

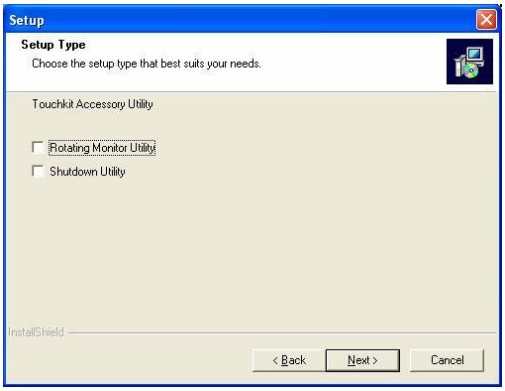
5. Check the check box if PS/2 touch controller is to be installed. The default setting is unchecked. Then Press **[Next >]** to continue installation.


Setup
Setup Type
Choose the setup type that best suits your needs.
PS2 Interface Installation, Please do not check this check box unless you want to install PS2 touchkit controller.
PS2 Touchscreen Driver
InstallShield
< Back
Next >
Cancel

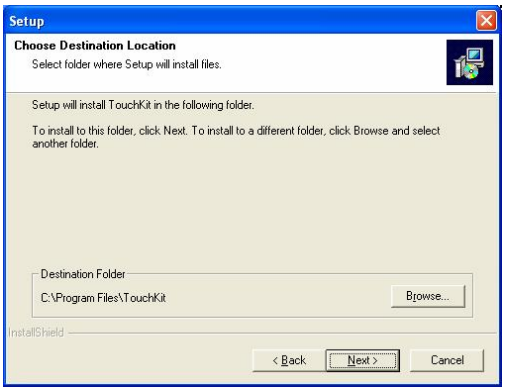


System will give you a warning, if user checks the PS2AUX check box,

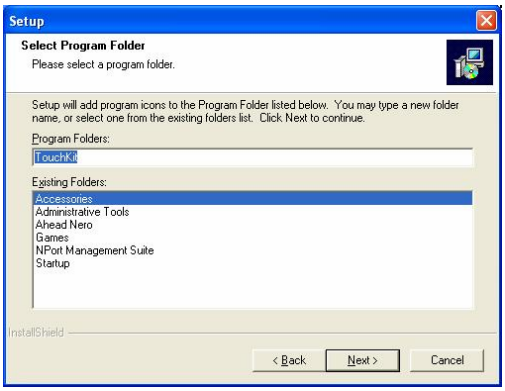
6. Choose the setup type that best suits your needs. There are two ***TouchKit*** accessory utilities for choosing, **Rotation Monitor Utility** and **Shutdown Utility**. Users can install the utility they want by checking the box. Then Press **[Next >]** to continue installation.



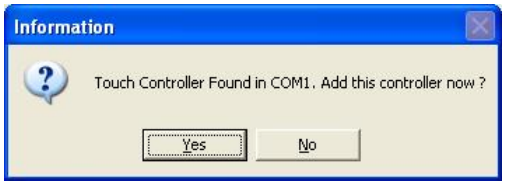
7. Select the appropriate folder where set-up files will be installed. Then press **[Next >]** to continue installation.


Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install TouchKit in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\TouchKit
Browse...
InstallShield
< Back
Next >
Cancel

8. Then type in the name of program folder for ***TouchKit*** or press **[Next >]** to continue. There will be a default name for it.



During driver installation, the setup program will scan COM port for RS232 ***Touchkit*** controller. Once the controller was scanned, the setup program will display a dialog as



Click Yes to add the controller on the specified COM port automatically.

During installation, the ***Touchkit*** controller driver will be installed automatically. Windows XP will prompt a warning message before driver certificated. Now, Press **[Continue >]** to continue installation.

Hardware Installation
The software you are installing for this hardware:
TouchKit TouchController
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

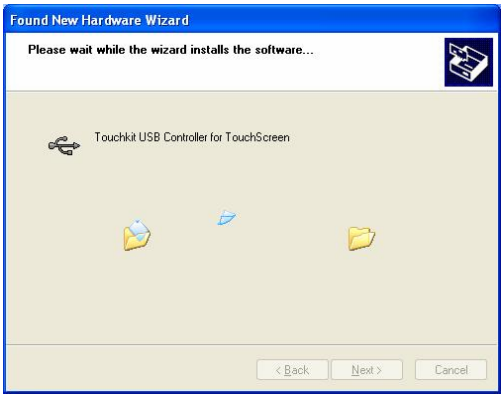
9. Windows is copying files to disk and the setup is complete. After finish the installation, if PS/2 touch controller is installed, it needs to reboot the computer.

Setup
Setup Complete
Setup has finished installing TouchKit on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
TouchKit was Installed! It needs reboot to ensure driver works well
< Back
Finish

10. After ***Touchkit*** installation, Unplug and plug the USB touch controller into the computer, Hardware wizard finds this hardware, Press **[Next >]**,

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
USB Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

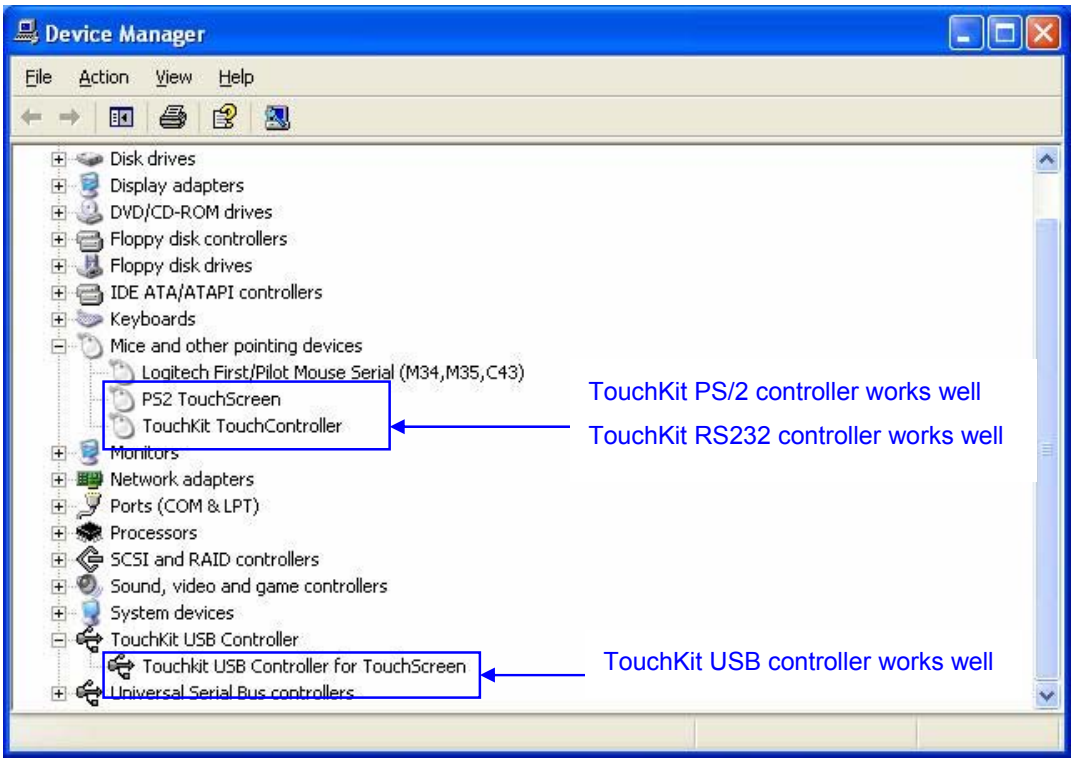
It will search the proper driver for the ***Touchkit*** controller device and install it automatically.


Found New Hardware Wizard
Please wait while the wizard installs the software...
Touchkit USB Controller for TouchScreen
< Back
Next >
Cancel

After the driver is installed, Press **[Finish >]** to complete the USB device installation.

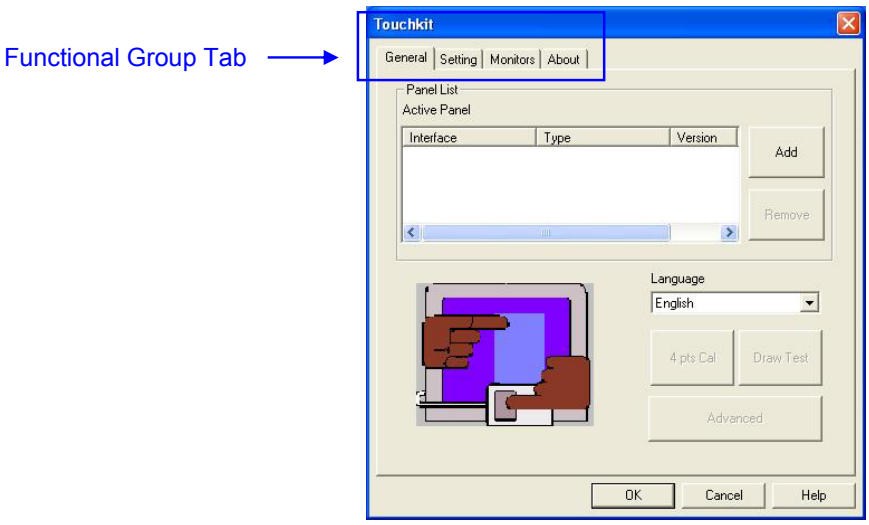
Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Touchkit USB Controller for TouchScreen
Click Finish to close the wizard.
< Back
Finish
Cancel

11. Users can check the situation of controllers in Device Manager. If the controller is set up well, there will be messages as the following picture.



Chapter 3. Configuration Utility and Right Button Emulator

There are four property pages in ***TouchKit*** utility, and they are **General**, **Setting**, **Monitors** and **About**. Each property page contains different functions for users to do the adjustments. Therefore, users can easily manage all the ***TouchKit*** controllers through ***TouchKit*** Utility.

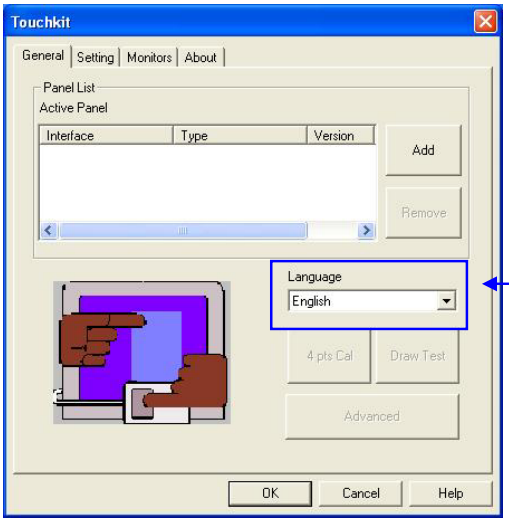


General

General property page contains the functions of **language selection**, **devices add/ remove**, **4 points calibration**, **Draw test** and **advanced**.

<Language>

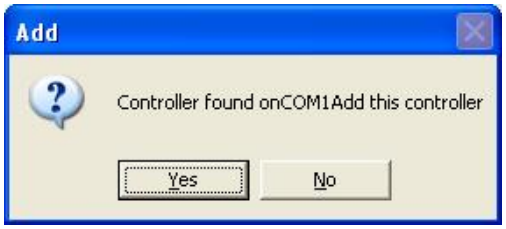
TouchKit supports multi-language user interface. Users could select native language that is compatible to operation system support. For example, if the operation system is a traditional Chinese version, user could see the normal display words under the traditional Chinese and English mode. There are nine different languages, **English**, **Traditional Chinese**, **Simplified Chinese**, **French**, **Spanish**, **German**, **Japanese, Italian** and **Korean**, supported in this feature of ***TouchKit***.



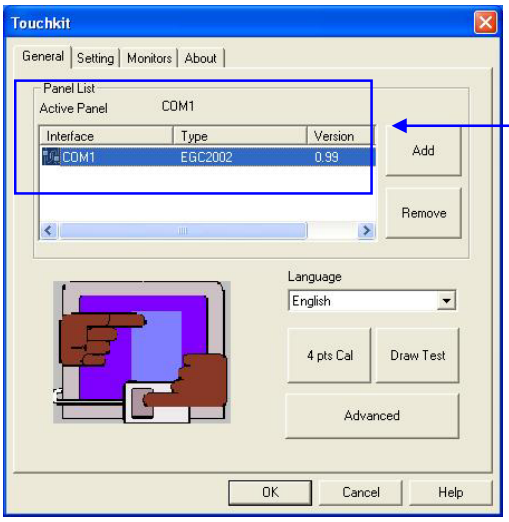
Select the compatible language first or user may not see the normal display of each button.

<Add> / <Remove>

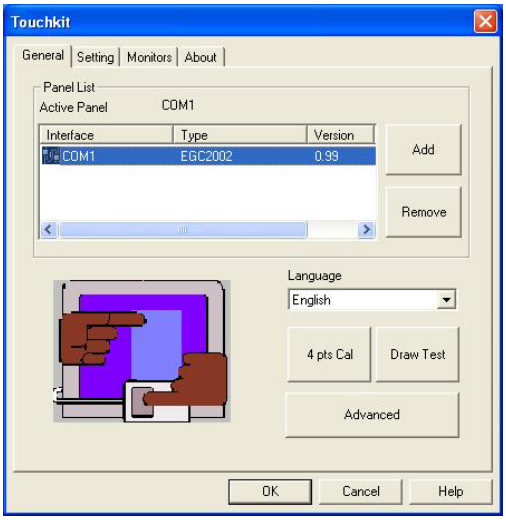
Please check the touch panel devices (including its controller) are equipped well, then click **[Add]** button to add all of those RS-232 and PS/2 components to the **Panel List** dialogue box.



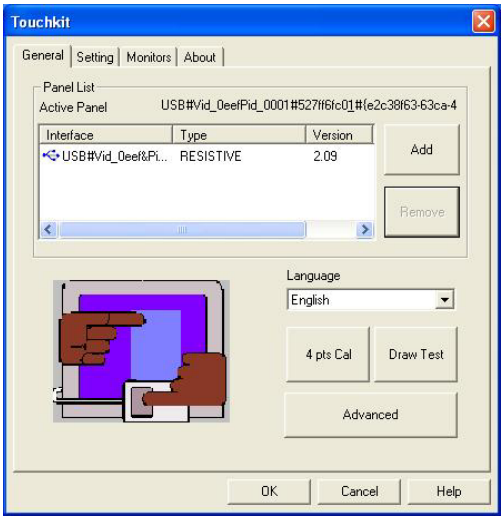
There is one devices found. Press **[Yes]** to continue.



The controller is displayed on the Panel List box. users can get the information of interface, type, firmware version and baud rate for each controller.
Select one device after added more than one device at the panel list window.
The one selected will activate the panel, and remember to do the calibration before starting to use touch panel.



But, for hot-swapping USB touch controller, it will be added automatically as soon as it was plugged into the computer. Then users can see the new device on the application program window. And, the program will remove the USB touch controller automatically as soon as it was unplugged.



There are three buttons, **[4pts Cal] [Draw Test] [Advanced]**, at the lower section of the **General** property page.

<4pts Cal>

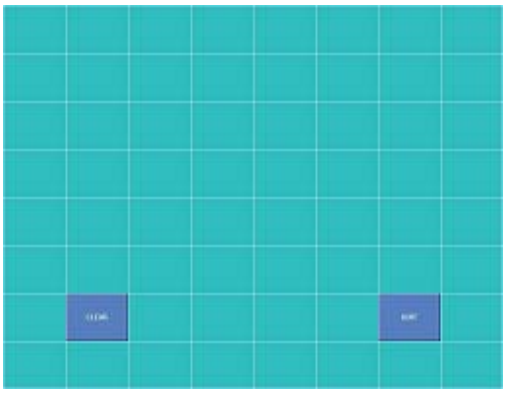
Correct 4 point locations on screen with the panel. Press **[4 pts Cal]**, screen displays as follows.

Touch the blinking symbol on panel until beep or stop blinking.

<Draw Test>

Test the drawing position related to the display screen on panel.

Click on the **[Draw Test]** button. There will be a squared blue display showing.

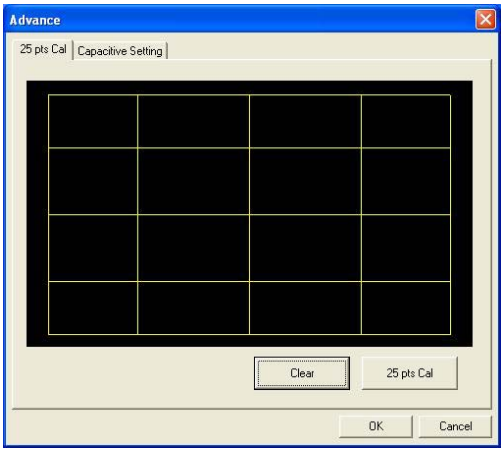


In drawing test window, users can click **[Clear]** button to clear the window. Also, User can click **[Quit]** or press mouse right button to quit from the drawing test.

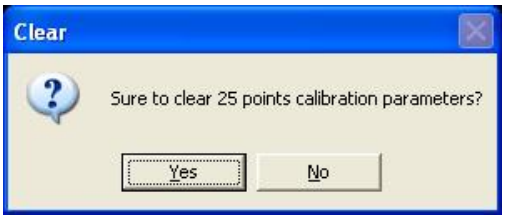
If **no touch action** happen within minutes, it will quit from the draw test window automatically. In drawing test window, users can verify the panel linearity, calibration capability, and drawing line quality.

<Advanced>

Touchkit provide more accuracy 25 points calibration for touch sensor. In addition, ***Touchkit*** provide controller setting for capacitive touch sensor. If the capacitive controller is selected, a capacitive setting property page appears on the advanced sheet. In general case, it does not need to do 25 points calibration other then bad linearity sensor.



Press **[Clear]** to clear the previous calibration records.

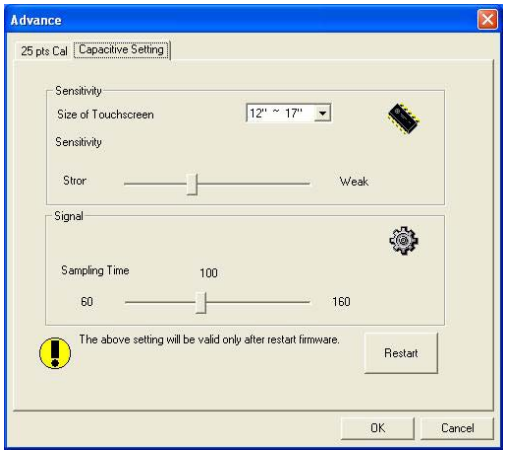


Press **[Yes]** to clear previous records.The record will become default record.

Press **[25ptCal]** to do 25 points calibration. Correct 25 point locations on screen with the panel.

Touch the blinking symbol on panel until beep or stop blinking.
After the calibration, the new record will overwrite the old one.

If the selected controller is capacitive type, an extra property page for capacitive setting adjustment shown as below:



Please select property size of capacitive screen first, and press **[Restart]**

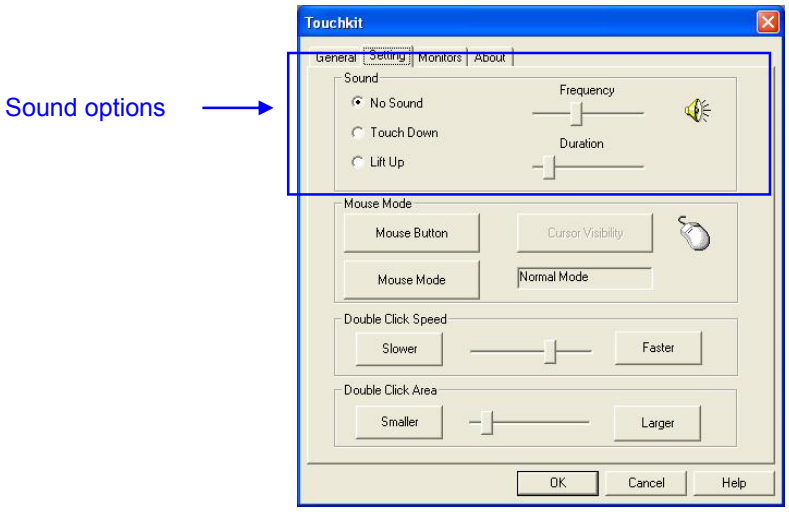
The capacitive controller will restart, and do not touch the screen before the warning message disappears

Warming: Do not adjust the sensitive and sampling time without RD help

Setting

There are three functional groups in **Setting** property page, and at the upper section of the property page is **sound option**; at the middle section is **Mouse Mode;** and at the lower section is **Double Click Adjustment**.

The **Sound** options provide user the click feedback while touching the panel. Select preferred option first.



<No Sound>

Users could choose to make no sound while using the touch panel.

<Touch Down>

The system will make a sound while touching the panel.

<Lift Up>

The system will not make any sound until finger leaves the touch panel.

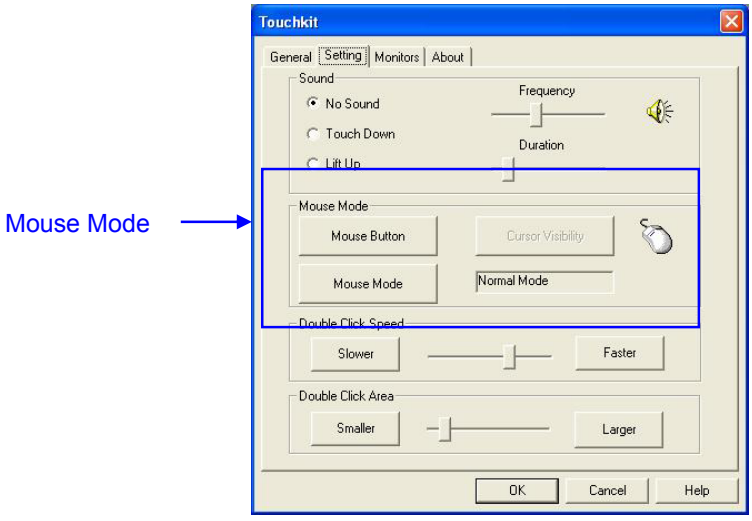
<Frequency>

Sound frequency, drag the cursor from left to right is low to high.

<Duration>

Sound duration, drag the cursor from left to right is short to long.

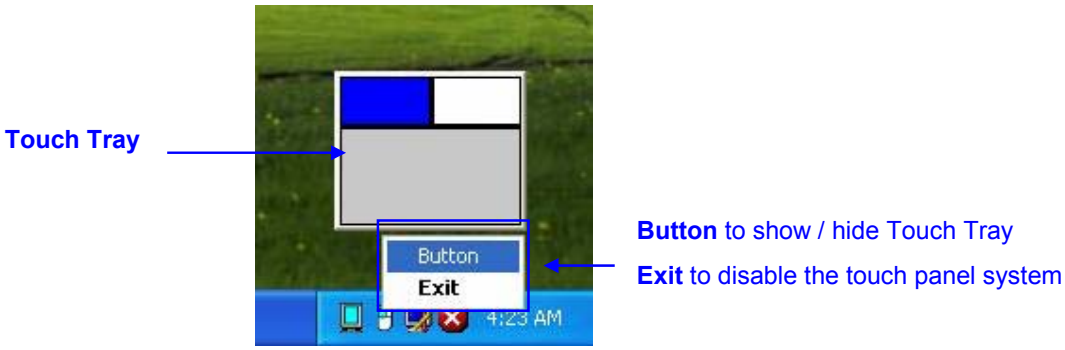
The **Mouse Mode** provides user different operating options. They are as follows:



<Mouse Button>

Click it to **show / hide *Touch Tray*** on the right bottom corner of the desktop. The touch panel system starts with the computer booting, and a mouse icon shows in the taskbar.

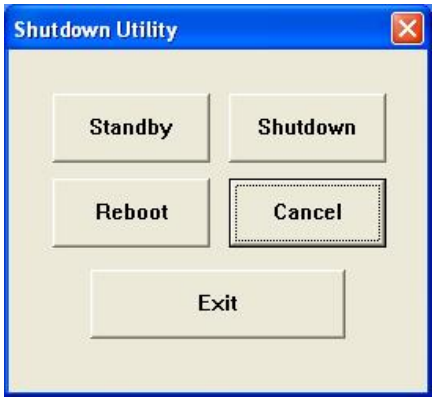
Users can choose show or hide ***Touch Tray*** from the mouse icon in the taskbar. Just right click the mouse icon, there will be a pop-up box. Using the **Button** to choose show or hide, and if user wants to disable the touch panel system, choose **Exit.**



Change **right / left** button by clicking the upper small rectangular box of ***Touch Tray***. Blue area expresses what button has been selected.

<Shutdown utility>

Click on shutdown utility in the task bar



Shutdown utility dialog

There are five modes in shutdown utility for users convenience.
[Standby] to enter standby mode that saves power consumption.
[Shutdown] to turn off PC.
[Reboot] to restart PC.
[Cancel] to escape from the Shutdown utility dialog.
[Exit] to disable the Shutdown utility.

Please notice that Windows NT doesn't support this function.

<Mouse Mode>

There are three kinds of mouse mode user could choose,

[Normal Mode]

It provides all the mouse functions, including the dragging function.

[Click on Touch]

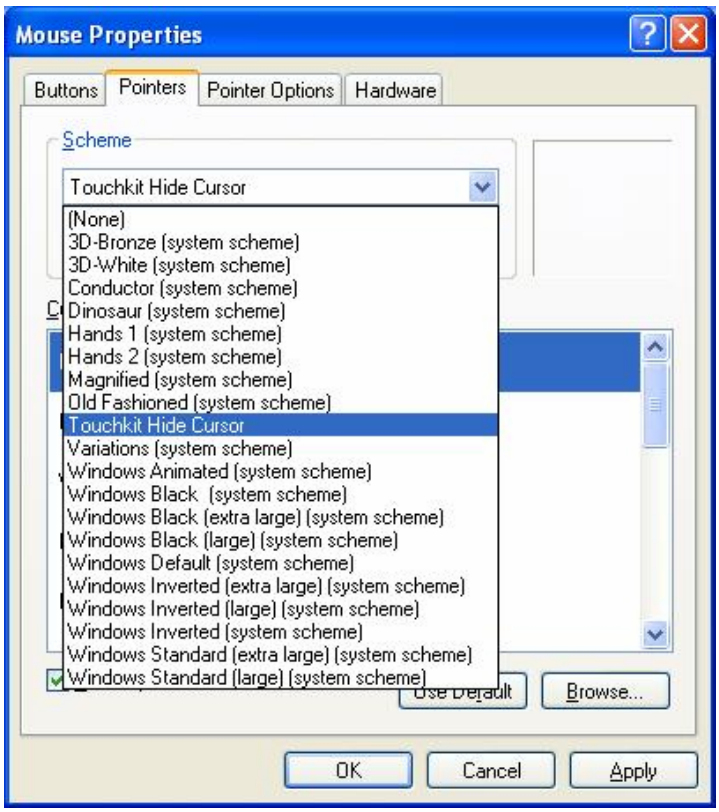
Click action is executed as soon as user touches the panel.

[Click on Release]

Click action will not be executed until finger leaves the panel.

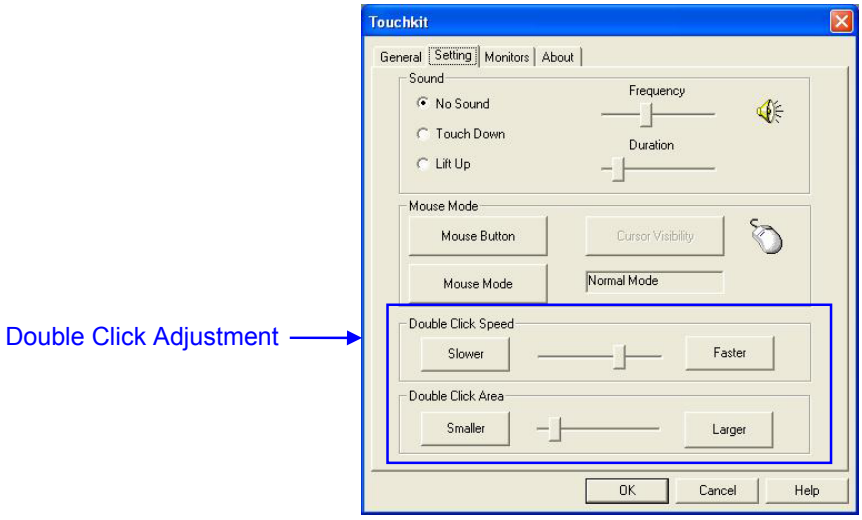
<Cursor Visibility>

Cursor visibility function provides user to hide the cursor in the display. Please go to **Start / Control Panel / Mouse / Pointers / Scheme**, and choose **TouchKit Hide Cursor**. Press **[Apply]** to make setting change, and press **[OK]** to escape the property page.



If user wants to cancel the function of TouchKit Hide Cursor, do the steps again and choose the other scheme.

The **Double Click adjustment** provides user to set up the tolerance while double clicking. They are as follows:



<Double Click Speed>

Double Click Speed is the double click response time for Windows system. User can adjust the proper double click for easy double click by touch panel.

<Double Click Area>

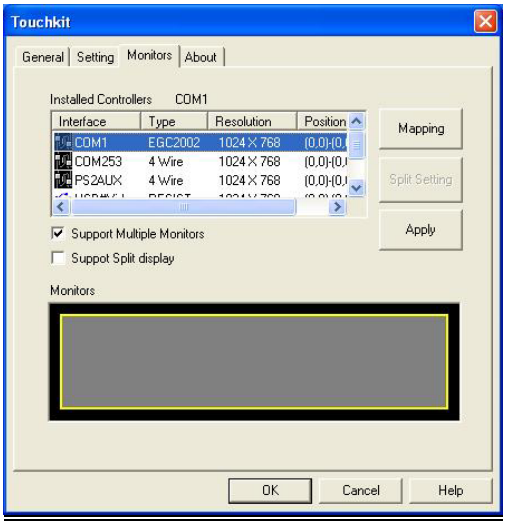
Each one touch has its own touch tolerance once someone may not fix in one point. So if user set the Double Click Area to **<Smaller>**, the panel will be very sensitive about micro-move while user wants to fix on a point. If user set it to **<Larger>**, it tolerates the larger touch point movement while user want to point at a fixed position.

Monitors

There are two functions in this property page, and they are **Multiple Monitors** and **Split Monitor**. Such a trendy and yet innovated design provides viewing pleasures, viewing flexibility and convenience to the users.

<Multiple Monitors>

To configure the mapping relationship between the monitors and the touch panels, select the monitor page as below.

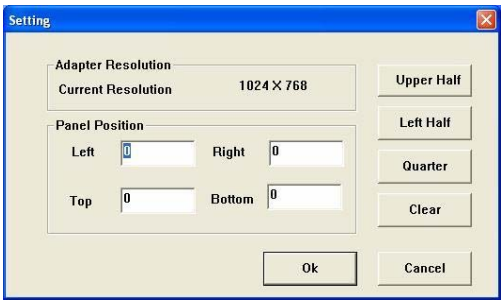


Set the check box (Use Multiple Monitors) to enable multiple monitors mapping. Uncheck this box will disable multiple-monitor configuration, and all of the touch panel controllers will be mapped to the primary monitor. The gray shadow area is the monitor mapped the selected controller/panel. The button **[Mapping]** is used to find the mapping relationships between the monitors and touch panel controllers. Press the **[Mapping]**, the software will guide the user to touch the corresponding monitor to obtain the mapping relationship.

After finish monitor mapping, Press **[Apply]** to apply the mapping relation.

<Split Monitors>

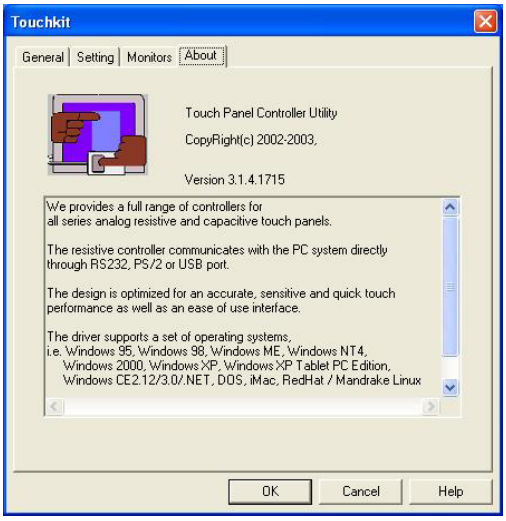
To use the Split Monitor function, users need to select which controller you want to launch this function, then check the Multiple Monitors box and Split Monitor at the same time as showing as the follow picture. Press the **[Split Monitor]** button to set up the activate area.



It shows the current resolution of display and users can set up the activate area by inputting the value by yourself or use the default button **[Upper Half]**, **[Left Half]** or **[Quarter]**. The default value of panel resolution should be full screen as Left: **0** , Right: **0**, Top: **0** and Bottom: **0**.

About

Information about ***TouchKit***.


Touchkit
General
Setting
Monitors
About
Touch Panel Controller Utility
CopyRight(c) 2002-2003,
Version 3.1.4.1715
We provides a full range of controllers for
all series analog resistive and capacitive touch panels.
The resistive controller communicates with the PC system directly
through RS232, PS/2 or USB port.
The design is optimized for an accurate, sensitive and quick touch
performance as well as an ease of use interface.
The driver supports a set of operating systems,
i.e. Windows 95, Windows 98, Windows ME, Windows NT4,
Windows 2000, Windows XP, Windows XP Tablet PC Edition,
Windows CE2.12/3.0/.NET, DOS, iMac, RedHat / Mandrake Linux
OK
Cancel
Help

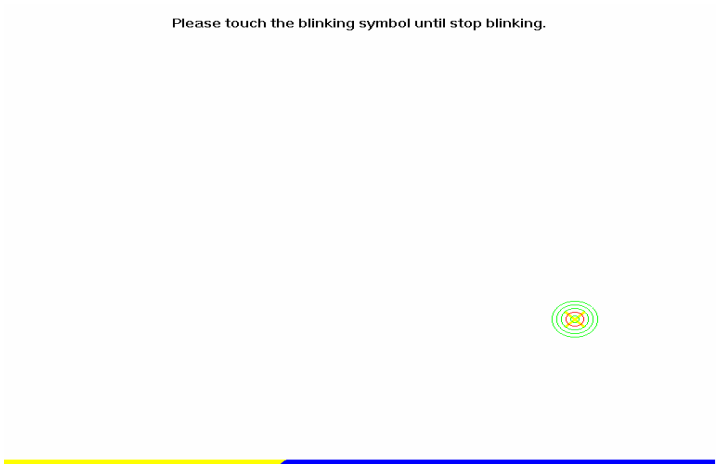
Chapter 4. MONITOR ROTATION SETTING

TouchKit driver package for Windows 98/ME/2000/XP provides two easiest ways to rotate the touch panel while the display is rotated.

- Rotating display by way of nVidia or ATI driver
- Rotating display by way of Pivot.

4.1 Rotating display by way of nVidia or ATI driver

1. After activating the rotation of nVidia or ATI driver, there will be one blinking symbol show as the following picture. Touch near the blinking symbol until stop blinking, and the touch panel will rotate itself.



One touch blinking symbol adjustment

2. However, 180˚ rotation of touch panel can not be done in one step, users need to rotate 90˚ twice.

4.2 Rotating display by way of Pivot

There are two ways to rotate the display by way of Pivot.

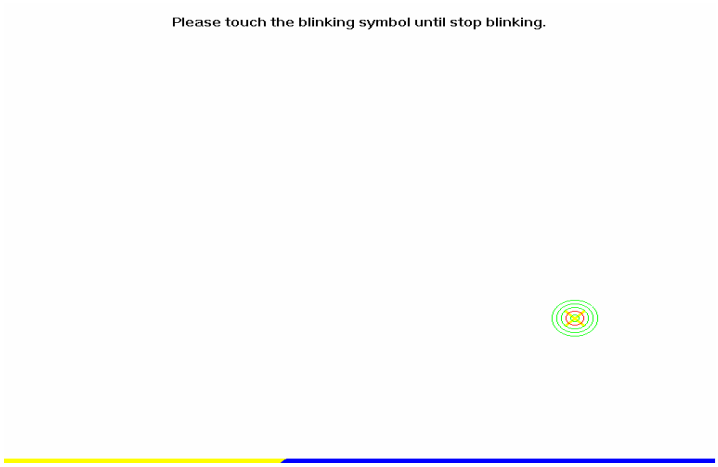
- Rotating display by way of Pivot hotkey or function menu
- Rotating display by way of RotTray icon provided by ***TouchKit***.

< Rotating display by way of Pivot hotkey or function menu >

1. To rotate the display, please install Pivot pro 6.05 first. Then reboot PC to activate Pivot.

2. There will be a pivot icon in the task bar. User can click on it, and user can choose four angles: 0°, 90°, 180°, 270° to rotate the display.

3. After choosing the angle users want to rotate, there will be one blinking symbol showing as the following picture. Touch this blinking symbol until stop blinking, and the touch panel will rotate itself.



One touch blinking symbol adjustment

4. However 180°rotation of touch panel can not be done in one step, users need to rotate 90° twice.

< Rotating display by way of RotTray icon provided by TouchKit>

1. To rotate the display, please install Pivot pro 6.05 first. Then reboot PC to activate Pivot.

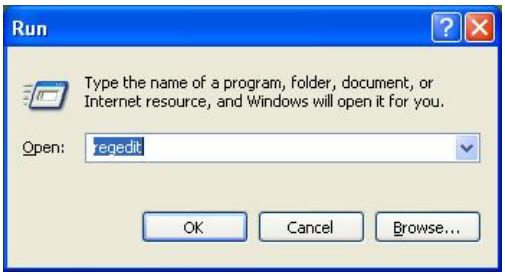
2. Users will see ***RotTray*** icon in the task bar.

RotTray icon

3. Clicking on ***RotTray***, it will call Pivot to rotate the display and touch panel 90° at the same time. Clicking it again, it will rotate another 90°to 180°. Every click on ***RotTray***, display will rotate clockwise. Recalibration and one symbol adjustment won't be necessary anymore.

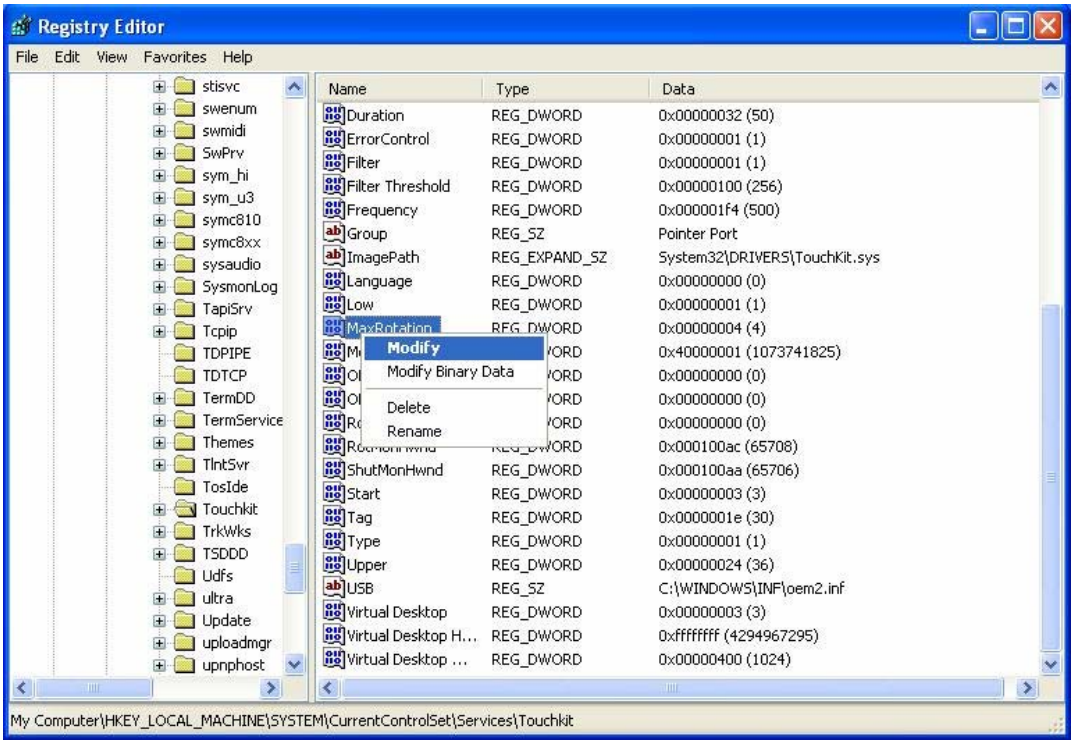
4. However this version of ***RotTray*** is design for Pivot pro 6.05. If users want to use older version of Pivot, like Pivot 5.1, users need to amend the value of windows registry. The next step is an example for setting Pivot 5.1 on Win98.

5. Go to **Start / Run**, and execute regedit.



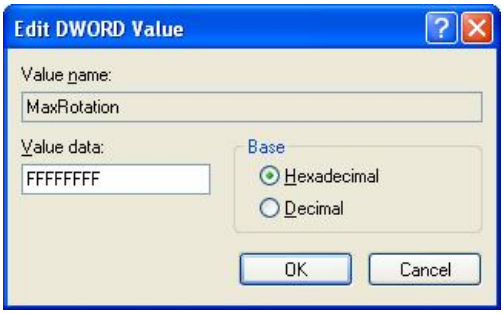
Press **[OK]** to execute

6. **For Windows 95/98/ME** OS, The Registry Editor will show as the follow picture. Then go to HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\VxD\TKIT.
   For Windows 2000/ XP, please go to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Touchkit
   Right click on the **MaxRotation**, and choose Modify.



Right click on MaxRotation to Modify Value data

7. Choosing the Hexadecimal Base, and replace the value data “4”(default) with “FFFFFFFF”.



Pressing **[OK]** to confirm.

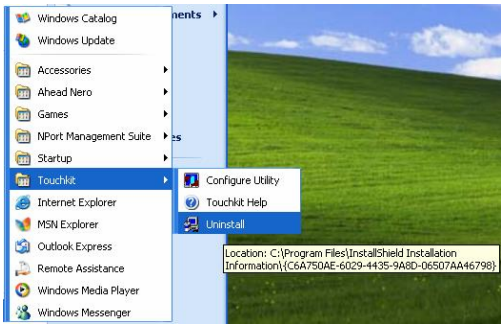
8. Here bellow are the value data for different version of Pivot:

Version of Pivot	Available Angle	Value Data
Pivot pro 6.05	0˚,90˚,180˚270˚	4 (default)
Pivot 5.1	0˚,-90˚	FFFFFFFF
Other Version	0˚, 90˚	2

Chapter 5. Uninstalling TouchKit

Follow these steps to uninstall ***TouchKit.***

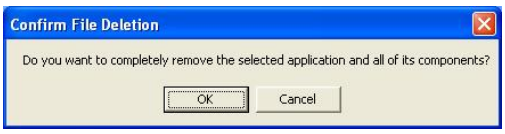
1. Go to S**tart / All programs / TouchKit / Uninstall**, and execute it.



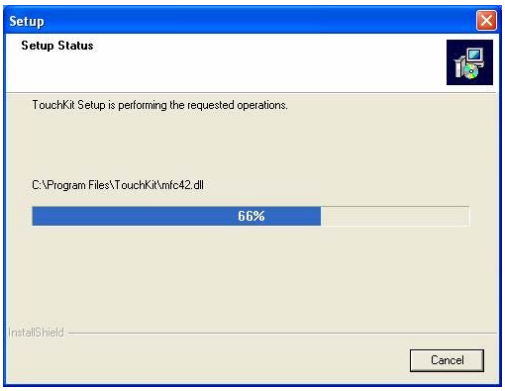
2. ***TouchKit*** setup dialog appears, and prepares to uninstall.

Setup
TouchKit Setup is preparing the InstallShield® Wizard, which will guide you through the rest of the setup process. Please wait.

3. Confirm dialog, press **[OK]** to start un-installation; **[Cancel]** to cancel un-installation.



4. Start to uninstall ***TouchKit***.



If user does not want to uninstall ***TouchKit*** at this moment, press **[Cancel]** to terminate the uninstall process.

1. ***TouchKit*** driver will not be unloaded until system re-boot. Press **[Yes]** to re-boot immediately or **[No]** to re-boot later.

Setup
Remove Touch Kit
Remove Complete
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish